

Limited Lead in Drinking Water Assessment

Longview Public Schools Longview, Washington Mt. Solo Middle School



Assessment Date(s): June 16, 2022

Report Date: July 18th, 2022

Prepared for: Jason Reetz, Facilities Manager
Longview Public Schools

Facility Owner/Operator: Longview Public Schools



Prepared By:
Sterling Technologies, LLC
317 NE 144th Street
Vancouver, WA 98685



Limited Lead in Drinking Water Assessment

Introduction

Sterling Technologies (Sterling) has recently completed a limited lead in drinking water screening of the Mt. Solo Middle School, Longview Public Schools, located at 5300 Mt. Solo Road in Longview, Washington. The purpose of the investigation was to identify the levels of lead in the various sources of drinking water throughout the school. Sample locations included drinking water fountains, classroom sink water faucets, restroom sink water faucets, and kitchen sink water faucets.

Background

The school district may be considered a water supply system from a water distribution perspective and may need to comply with the federal guidelines for water monitoring as specified in the Lead & Copper Rule (Federal Register: June 30, 1994, Part 5. 40 CFR Parts 141 and 142; Drinking Water; Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper) and be compelled to monitor the drinking water within the district on an ongoing basis after an effective treatment approach is implemented (56FR 26460 – Lead Copper Rule). Within 30 days of learning the lead level results, all water systems (schools in this case) must provide individual lead tap results to the people who receive water from the sites that were sampled, regardless of whether the results exceed the Lead Action Level, as required by 40 CFR 141.85(d).

Results Summary

Water samples were collected from 65 drinking water sources at the school.

64 samples were found to NOT contain elevated lead levels as they were below 15 ppb.

1 sample was found to contain an elevated lead level above 15 ppb. 17 samples were noted to contain lead but were below the federal standard.

Sampling

The samples were collected by EPA accredited inspectors provided by Sterling. Samples included representative amounts of water. The lead in drinking water samples were analyzed by Apex Laboratories by EPA Method 200.8. The sampling guidelines followed were based on the federal school standard with emphasis on the Lead Copper Rule for sampling sites chosen.

Assessment Results

Analytical Results: Lead in Drinking Water

Item	Sample ID.	Area/Building	Location	Result (µ/L)
1	MS-0		Nurse's Restroom, Sink Faucet	1.13
2	MS-1		Nurse's Sink, Faucet	0.647



Item	Sample ID.	Area/Building	Location	Result (µ/L)
3	MS-2	By 500	Staff Restroom, E Faucet	0.823
4	MS-3	By 500	Staff Restroom, W Faucet	0.971
5	MS-4	By 504	Staff Room, Sink Faucet	0.559
6	MS-5		Staff Workroom, Sink Faucet	1.14
7	MS-6	By 300	Girls Restroom, Faucet	1.07
8	MS-7	By 300	Girls Restroom North of Café, Faucet	2.18
9	MS-8	Kitchen	Staff Restroom, Sink Faucet	0.475
10	MS-9	Kitchen	S F – NW, Faucet	1.94
11	MS-10	Kitchen	NE Wash, Sink Faucet	4.02
12	MS-11	Kitchen	Small Sink – WNN, Faucet	39.4
13	MS-12	Kitchen	Small Sink – South, Faucet	0.581
14	MS-13	Kitchen	Sink – West, Faucet	1.14
15	MS-14	Kitchen	Wash Sink – NorthX2, Faucet	1.10
16	MS-15	Kitchen	Small Sink – ENE Faucet	3.33
17	MS-16	Kitchen	Cook Sink – SW, Faucet	9.97
18	MS-17	Kitchen	Cook Wash Sink, Faucet	3.93
19	MS-18	Hall	North of Kitchen, Drinking Fountain	ND
20	MS-19	N of Café	Staff Restroom, Faucet	ND
21	MS-20	200	Sink Faucet	0.543
22	MS-21	Hall by 300	Drinking Fountain	0.896
23	MS-22	Hall by 300	Drinking Fountain	ND
24	MS-23	By 516	Boys Restroom, Sink Faucet	5.33
25	MS-24	516	L3 x2, Sink Faucet	1.29
26	MS-25	500	L3, Sink Faucet	0.500
27	MS-26	512	B Prep, Sink Faucet	4.78
28	MS-27	512	B LSF x2, Faucet	3.45
29	MS-28	512	LSF2, Faucet	2.34
30	MS-29	N of Café	Boys Restroom, Faucet	1.83
31	MS-30	By 300	Boys Restroom, Faucet	1.92
32	MS-31	509	L2 Hood Faucet	3.51
33	MS-32	503	Sink Faucet	0.440
34	MS-33	500	L2, Sink Faucet	0.792
35	MS-34	503	Drinking Fountain	0.316
36	MS-35	500	L1, Sink Faucet	0.424
37	MS-36	509	LS, Sink Faucet	1.22



Item	Sample ID.	Area/Building	Location	Result (µ/L)
38	MS-37	507	Sink	0.984
39	MS-38	509	L1, Sink Faucet	0.705
40	MS-39	By 516	Boys Restroom, Sink Faucet	1.30
41	MS-40	516	L2 x2, Sink Faucet	2.16
42	MS-41	516	L1 x2, Sink Faucet	1.18
43	MS-42	605	Sink Faucet	6.74
44	MS-43	500	LF, Sink Faucet	0.906
45	MS-44	512	B – LF-1	2.97
46	MS-45	Hall by 509	Drinking Fountain	ND
47	MS-46	516	Drinking Fountain	0.534
48	MS-47	605	Drinking Fountain	1.16
49	MS-48	Hall by 704	Sink Faucet	0.695
50	MS-49	Hall by 804	Sink Faucet	1.07
51	MS-50	512	B – Front, Sink Faucet	8.91
52	MS-51	604	Drinking Fountain	1.95
53	MS-52	603	Drinking Fountain	0.522
54	MS-53	603	Sink Faucet	0.932
55	MS-54	By 516	Girls Restroom, Faucet	6.82
56	MS-55	604	Sink Faucet	1.55
57	MS-56	Girls Locker	Sink Faucet	1.07
58	MS-66	Across Gym	Girls Restroom, Faucet	6.55
59	MS-57	Boys Locker	Sink Faucet	0.551
60	MS-59	Girls Locker	Restroom, Faucet	1.24
61	MS-60	Across Gym	Girls Restroom, Drinking Fountain	ND
62	MS-61	Across Gym	Boys Restroom, Faucet	5.20
63	MS-62	Across Gym	Boys Restroom, Drinking Fountain	0.245
64	MS-63	Boys Locker	Restroom, Sink Faucet	1.31
65	MS-64	503	Restroom, Sink Faucet	1.04

ND = Non-Detect

As highlighted () in the above table, the lab result for 1 of the 65 water samples collected was found to be above the 15 ppb action level for lead in drinking water. The remaining 64 drinking water samples were found to be below the 15 ppb action level.

Note: Drinking water sources with lead levels above an approximate background level of 2.0 ppb have also been highlighted ().



Conclusions and Recommendations

One location was noted to have elevated lead in drinking water—The kitchen sink in the north corner. No elevated lead in drinking water levels were noted in the other locations that were sampled at the school, and the results were below the lead in drinking water EPA standard under the Safe Drinking Water Act of 15 ppb. Seventeen drinking water locations did have residual lead levels above a background level of 2.0 ppb.

It is our recommendation that the Longview School District consider the installation of a combination drinking fountain and motion sensor water filling system using an ANSI 53 certified filter by the National Science Foundation (NSF). The Elkay EZH20 is a popular fixture and is advertised online for about \$1,500 per unit. Note that fixtures with refrigeration jump in price to around \$4,000. These systems have proven effective for the removal of lead particulates with our other school district clients.

Given the age of the older school plumbing systems and the residual levels of lead noted in the drinking water sources in seventeen locations, Sterling recommends that the district consider replacement of all water fountains at the campus with fixtures that include a suitable lead filtration system. As the existing drinking water fountains do not have an electrical source, a mechanical system would be preferable. With the mechanical fixtures, required filter changes are noted on a counter that is based on the volume of water passed through the filter.

The district might also consider instituting an administrative policy that only those drinking water sources that include a lead filtration system be used for drinking water; discourage use of unfiltered water sources (e.g., classroom sink water faucets).

Limitations

This report is for the exclusive use of the client, applies only to the specific subject property detailed above, and shall not be relied upon by any other party without the prior written consent of the undersigned.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No other hazardous materials/wastes were investigated. No other conditions, expressed or implied, should be understood.

Recordkeeping

Additional copies of this report are available from Sterling Technologies upon request. Unless otherwise requested, samples will be retained for a period of 30 days, after which they will be discarded. If you have any questions about these results or would like additional information, please feel free to call our office.

Sterling Technologies thanks you for this opportunity to be of service.

Sincerely,



Thomas Nadermann, M.S., Principal
AHERA Inspector #155212, Lead Risk Assessor #0493



Appendix A

Inspector's Certification



STATE OF WASHINGTON

Department of Commerce
Lead-Based Paint Abatement Program

Thomas Heinrich Nadermann

*Has fulfilled the certification requirements of
WAC 365-230
and has been certified to conduct lead-based
paint activities as a
Risk Assessor*

<u>Certification #</u>	<u>Issuance Date</u>	<u>Expiration Date</u>
0493	02/08/2021	10/22/2023

STATE OF WASHINGTON

Department of Commerce
Lead-Based Paint Abatement Program

Edwin L Wilson

*Has fulfilled the certification requirements of
WAC 365-230
and has been certified to conduct lead-based
paint activities as a
Risk Assessor*

<u>Certification #</u>	<u>Issuance Date</u>	<u>Expiration Date</u>
8040	08/26/2021	07/22/2024



Appendix B

Field Data

Laboratory Results





ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Thursday, July 7, 2022

Thomas Nadermann
Sterling Technologies LLC
317 NE 144th St
Vancouver, WA 98685

RE: A2F0836 - Drinking Water - 2022 - Longview SD/Mt Solo

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A2F0836, which was received by the laboratory on 6/17/2022 at 12:45:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler#1	16.4 degC
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This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Sterling Technologies LLC

317 NE 144th St
Vancouver, WA 98685

Project: Drinking Water - 2022

Project Number: Longview SD/Mt Solo
Project Manager: Thomas Nadermann

Report ID:

A2F0836 - 07 07 22 1017

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MS-0	A2F0836-01	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-1	A2F0836-02	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-2	A2F0836-03	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-3	A2F0836-04	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-4	A2F0836-05	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-5	A2F0836-06	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-6	A2F0836-07	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-7	A2F0836-08	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-8	A2F0836-09	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-9	A2F0836-10	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-10	A2F0836-11	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-11	A2F0836-12	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-12	A2F0836-13	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-13	A2F0836-14	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-14	A2F0836-15	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-15	A2F0836-16	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-16	A2F0836-17	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-17	A2F0836-18	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-18	A2F0836-19	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-19	A2F0836-20	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-20	A2F0836-21	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-21	A2F0836-22	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-22	A2F0836-23	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-23	A2F0836-24	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-24	A2F0836-25	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-25	A2F0836-26	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-26	A2F0836-27	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-27	A2F0836-28	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-28	A2F0836-29	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-29	A2F0836-30	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-30	A2F0836-31	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-31	A2F0836-32	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-32	A2F0836-33	Drinking Water	06/16/22 00:00	06/17/22 12:45

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Darrell Auvil, Client Services Manager



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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062Sterling Technologies LLC317 NE 144th St
Vancouver, WA 98685Project: Drinking Water - 2022Project Number: Longview SD/Mt Solo
Project Manager: Thomas NadermannReport ID:

A2F0836 - 07 07 22 1017

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MS-33	A2F0836-34	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-34	A2F0836-35	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-35	A2F0836-36	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-36	A2F0836-37	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-37	A2F0836-38	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-38	A2F0836-39	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-39	A2F0836-40	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-40	A2F0836-41	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-41	A2F0836-42	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-42	A2F0836-43	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-43	A2F0836-44	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-44	A2F0836-45	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-45	A2F0836-46	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-46	A2F0836-47	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-47	A2F0836-48	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-48	A2F0836-49	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-49	A2F0836-50	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-50	A2F0836-51	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-51	A2F0836-52	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-52	A2F0836-53	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-53	A2F0836-54	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-54	A2F0836-55	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-55	A2F0836-56	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-56	A2F0836-57	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-57	A2F0836-58	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-58	A2F0836-59	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-59	A2F0836-60	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-60	A2F0836-61	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-61	A2F0836-62	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-62	A2F0836-63	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-63	A2F0836-64	Drinking Water	06/16/22 00:00	06/17/22 12:45
MS-64	A2F0836-65	Drinking Water	06/16/22 00:00	06/17/22 12:45

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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503-718-2323

ORELAP ID: OR100062

Sterling Technologies LLC317 NE 144th St
Vancouver, WA 98685Project: Drinking Water - 2022Project Number: Longview SD/Mt Solo
Project Manager: Thomas NadermannReport ID:

A2F0836 - 07 07 22 1017

ANALYTICAL SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MS-0 (A2F0836-01) Matrix: Drinking Water								
Batch: 22F1044								
Lead	1.13	---	0.200	ug/L	1	06/29/22 15:04	EPA 200.8	
MS-1 (A2F0836-02) Matrix: Drinking Water								
Batch: 22F1044								
Lead	0.647	---	0.200	ug/L	1	06/29/22 15:08	EPA 200.8	
MS-2 (A2F0836-03) Matrix: Drinking Water								
Batch: 22F1044								
Lead	0.823	---	0.200	ug/L	1	06/29/22 15:11	EPA 200.8	
MS-3 (A2F0836-04) Matrix: Drinking Water								
Batch: 22F1044								
Lead	0.971	---	0.200	ug/L	1	06/29/22 15:15	EPA 200.8	
MS-4 (A2F0836-05) Matrix: Drinking Water								
Batch: 22F1044								
Lead	0.559	---	0.200	ug/L	1	06/29/22 15:19	EPA 200.8	
MS-5 (A2F0836-06) Matrix: Drinking Water								
Batch: 22F1044								
Lead	1.14	---	0.200	ug/L	1	06/29/22 15:22	EPA 200.8	
MS-6 (A2F0836-07) Matrix: Drinking Water								
Batch: 22F1044								
Lead	1.07	---	0.200	ug/L	1	06/29/22 15:34	EPA 200.8	
MS-7 (A2F0836-08) Matrix: Drinking Water								
Batch: 22F1044								
Lead	2.18	---	0.200	ug/L	1	06/29/22 15:38	EPA 200.8	
MS-8 (A2F0836-09) Matrix: Drinking Water								
Batch: 22F1044								
Lead	0.475	---	0.200	ug/L	1	06/29/22 15:42	EPA 200.8	
MS-9 (A2F0836-10) Matrix: Drinking Water								
Batch: 22F1044								

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ANALYTICAL SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MS-9 (A2F0836-10)		Matrix: Drinking Water						
Lead	1.94	---	0.200	ug/L	1	06/29/22 15:45	EPA 200.8	
MS-10 (A2F0836-11)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	4.02	---	0.200	ug/L	1	06/29/22 16:01	EPA 200.8	
MS-11 (A2F0836-12)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	39.4	---	0.200	ug/L	1	06/29/22 16:21	EPA 200.8	
MS-12 (A2F0836-13)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	0.581	---	0.200	ug/L	1	06/29/22 16:26	EPA 200.8	
MS-13 (A2F0836-14)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	1.14	---	0.200	ug/L	1	06/29/22 16:29	EPA 200.8	
MS-14 (A2F0836-15)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	1.10	---	0.200	ug/L	1	06/29/22 16:33	EPA 200.8	
MS-15 (A2F0836-16)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	3.33	---	0.200	ug/L	1	06/29/22 16:37	EPA 200.8	
MS-16 (A2F0836-17)		Matrix: Drinking Water						
Batch: 22F1111								
Lead	9.97	---	0.222	ug/L	1	06/30/22 18:50	EPA 200.8	DW-D
MS-17 (A2F0836-18)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	3.93	---	0.200	ug/L	1	06/29/22 16:41	EPA 200.8	
MS-18 (A2F0836-19)		Matrix: Drinking Water						
Batch: 22F1049								

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ANALYTICAL SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MS-18 (A2F0836-19)		Matrix: Drinking Water						
Lead	ND	---	0.200	ug/L	1	06/29/22 16:45	EPA 200.8	
MS-19 (A2F0836-20)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	ND	---	0.200	ug/L	1	06/29/22 16:49	EPA 200.8	
MS-20 (A2F0836-21)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	0.543	---	0.200	ug/L	1	06/29/22 16:52	EPA 200.8	
MS-21 (A2F0836-22)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	0.896	---	0.200	ug/L	1	06/29/22 16:55	EPA 200.8	
MS-22 (A2F0836-23)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	ND	---	0.200	ug/L	1	06/29/22 17:07	EPA 200.8	
MS-23 (A2F0836-24)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	5.33	---	0.200	ug/L	1	06/29/22 17:10	EPA 200.8	
MS-24 (A2F0836-25)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	1.29	---	0.200	ug/L	1	06/29/22 17:15	EPA 200.8	
MS-25 (A2F0836-26)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	0.500	---	0.200	ug/L	1	06/29/22 17:19	EPA 200.8	
MS-26 (A2F0836-27)		Matrix: Drinking Water						
Batch: 22F1049								
Lead	4.78	---	0.200	ug/L	1	06/29/22 17:22	EPA 200.8	
MS-27 (A2F0836-28)		Matrix: Drinking Water						
Batch: 22F1049								

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Sterling Technologies LLC

317 NE 144th St
Vancouver, WA 98685Project: Drinking Water - 2022Project Number: Longview SD/Mt Solo
Project Manager: Thomas Nadermann

Report ID:

A2F0836 - 07 07 22 1017

ANALYTICAL SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MS-27 (A2F0836-28)				Matrix: Drinking Water				
Lead	3.45	---	0.200	ug/L	1	06/29/22 17:26	EPA 200.8	
MS-28 (A2F0836-29)				Matrix: Drinking Water				
Batch: 22F1049								
Lead	2.34	---	0.200	ug/L	1	06/29/22 17:30	EPA 200.8	
MS-29 (A2F0836-30)				Matrix: Drinking Water				
Batch: 22F1049								
Lead	1.83	---	0.200	ug/L	1	06/29/22 17:34	EPA 200.8	
MS-30 (A2F0836-31)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	1.92	---	0.200	ug/L	1	06/29/22 17:58	EPA 200.8	
MS-31 (A2F0836-32)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	3.51	---	0.200	ug/L	1	06/29/22 18:10	EPA 200.8	
MS-32 (A2F0836-33)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	0.440	---	0.200	ug/L	1	06/29/22 18:14	EPA 200.8	
MS-33 (A2F0836-34)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	0.792	---	0.200	ug/L	1	06/29/22 18:17	EPA 200.8	
MS-34 (A2F0836-35)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	0.316	---	0.200	ug/L	1	06/29/22 18:21	EPA 200.8	
MS-35 (A2F0836-36)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	0.424	---	0.200	ug/L	1	06/29/22 18:24	EPA 200.8	
MS-36 (A2F0836-37)				Matrix: Drinking Water				
Batch: 22F1078								

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ANALYTICAL SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MS-36 (A2F0836-37)				Matrix: Drinking Water				
Lead	1.22	---	0.200	ug/L	1	06/29/22 18:28	EPA 200.8	
MS-37 (A2F0836-38)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	0.984	---	0.200	ug/L	1	06/29/22 18:39	EPA 200.8	
MS-38 (A2F0836-39)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	0.705	---	0.200	ug/L	1	06/29/22 18:43	EPA 200.8	
MS-39 (A2F0836-40)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	1.30	---	0.200	ug/L	1	06/29/22 18:47	EPA 200.8	
MS-40 (A2F0836-41)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	2.16	---	0.200	ug/L	1	06/29/22 18:51	EPA 200.8	
MS-41 (A2F0836-42)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	1.18	---	0.200	ug/L	1	06/29/22 18:55	EPA 200.8	
MS-42 (A2F0836-43)				Matrix: Drinking Water				
Batch: 22F1111								
Lead	6.74	---	0.222	ug/L	1	06/30/22 18:56	EPA 200.8	DW-D
MS-43 (A2F0836-44)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	0.906	---	0.200	ug/L	1	06/29/22 18:59	EPA 200.8	
MS-44 (A2F0836-45)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	2.97	---	0.200	ug/L	1	06/29/22 19:03	EPA 200.8	
MS-45 (A2F0836-46)				Matrix: Drinking Water				
Batch: 22F1078								

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ANALYTICAL SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MS-45 (A2F0836-46)				Matrix: Drinking Water				
Lead	ND	---	0.200	ug/L	1	06/29/22 19:07	EPA 200.8	
MS-46 (A2F0836-47)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	0.534	---	0.200	ug/L	1	06/29/22 19:11	EPA 200.8	
MS-47 (A2F0836-48)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	1.16	---	0.200	ug/L	1	06/29/22 19:14	EPA 200.8	
MS-48 (A2F0836-49)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	0.695	---	0.200	ug/L	1	06/29/22 19:26	EPA 200.8	
MS-49 (A2F0836-50)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	1.07	---	0.200	ug/L	1	06/29/22 19:29	EPA 200.8	
MS-50 (A2F0836-51)				Matrix: Drinking Water				
Batch: 22F1078								
Lead	8.91	---	0.200	ug/L	1	06/29/22 19:33	EPA 200.8	
MS-51 (A2F0836-52)				Matrix: Drinking Water				
Batch: 22F1081								
Lead	1.95	---	0.200	ug/L	1	06/29/22 19:49	EPA 200.8	
MS-52 (A2F0836-53)				Matrix: Drinking Water				
Batch: 22F1081								
Lead	0.522	---	0.200	ug/L	1	06/29/22 20:01	EPA 200.8	
MS-53 (A2F0836-54)				Matrix: Drinking Water				
Batch: 22F1081								
Lead	0.932	---	0.200	ug/L	1	06/29/22 20:13	EPA 200.8	
MS-54 (A2F0836-55)				Matrix: Drinking Water				
Batch: 22F1081								

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ANALYTICAL SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MS-54 (A2F0836-55)		Matrix: Drinking Water						
Lead	6.82	---	0.200	ug/L	1	06/29/22 20:17	EPA 200.8	
MS-55 (A2F0836-56)		Matrix: Drinking Water						
Batch: 22F1081								
Lead	1.55	---	0.200	ug/L	1	06/29/22 20:21	EPA 200.8	
MS-56 (A2F0836-57)		Matrix: Drinking Water						
Batch: 22F1081								
Lead	1.07	---	0.200	ug/L	1	06/29/22 20:25	EPA 200.8	
MS-57 (A2F0836-58)		Matrix: Drinking Water						
Batch: 22F1081								
Lead	6.55	---	0.200	ug/L	1	06/29/22 20:29	EPA 200.8	
MS-58 (A2F0836-59)		Matrix: Drinking Water						
Batch: 22F1081								
Lead	0.551	---	0.200	ug/L	1	06/29/22 20:33	EPA 200.8	
MS-59 (A2F0836-60)		Matrix: Drinking Water						
Batch: 22F1081								
Lead	1.24	---	0.200	ug/L	1	06/29/22 20:37	EPA 200.8	
MS-60 (A2F0836-61)		Matrix: Drinking Water						
Batch: 22F1081								
Lead	ND	---	0.200	ug/L	1	06/29/22 20:41	EPA 200.8	
MS-61 (A2F0836-62)		Matrix: Drinking Water						
Batch: 22F1081								
Lead	5.20	---	0.200	ug/L	1	06/29/22 20:44	EPA 200.8	
MS-62 (A2F0836-63)		Matrix: Drinking Water						
Batch: 22F1081								
Lead	0.245	---	0.200	ug/L	1	06/29/22 20:48	EPA 200.8	
MS-63 (A2F0836-64)		Matrix: Drinking Water						
Batch: 22F1081								

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Project Number: **Longview SD/Mt Solo**

Project Manager: **Thomas Nadermann**

Report ID:

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ANALYTICAL SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MS-63 (A2F0836-64)				Matrix: Drinking Water				
Lead	1.31	---	0.200	ug/L	1	06/29/22 21:00	EPA 200.8	
MS-64 (A2F0836-65)				Matrix: Drinking Water				
Batch: 22F1081								
Lead	1.04	---	0.200	ug/L	1	06/29/22 21:04	EPA 200.8	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22F1044 - EPA 200.8 Direct Analysis						Drinking Water						
Blank (22F1044-BLK1)			Prepared: 06/29/22 08:38		Analyzed: 06/29/22 14:03							
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
LCS (22F1044-BS1)			Prepared: 06/29/22 08:38		Analyzed: 06/29/22 14:06							
EPA 200.8												
Lead	14.5	---	0.201	ug/L	1	15.0	---	97	85-115%	---	---	
Duplicate (22F1044-DUP1)			Prepared: 06/29/22 08:38		Analyzed: 06/29/22 14:13							
QC Source Sample: Non-SDG (A2F0819-03)												
Lead	0.291	---	0.200	ug/L	1	---	0.277	---	---	5	20%	
Matrix Spike (22F1044-MS1)			Prepared: 06/29/22 08:38		Analyzed: 06/29/22 14:17							
QC Source Sample: Non-SDG (A2F0819-03)												
EPA 200.8												
Lead	14.2	---	0.201	ug/L	1	15.0	0.277	93	70-130%	---	---	
Matrix Spike (22F1044-MS2)			Prepared: 06/29/22 08:38		Analyzed: 06/29/22 15:50							
QC Source Sample: MS-9 (A2F0836-10)												
EPA 200.8												
Lead	15.5	---	0.201	ug/L	1	15.0	1.94	91	70-130%	---	---	
Batch 22F1049 - EPA 200.8 Direct Analysis						Drinking Water						
Blank (22F1049-BLK1)			Prepared: 06/29/22 09:26		Analyzed: 06/29/22 15:54							
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
LCS (22F1049-BS1)			Prepared: 06/29/22 09:26		Analyzed: 06/29/22 15:57							
EPA 200.8												
Lead	14.5	---	0.201	ug/L	1	15.0	---	97	85-115%	---	---	
Duplicate (22F1049-DUP1)			Prepared: 06/29/22 09:26		Analyzed: 06/29/22 16:05							
QC Source Sample: MS-10 (A2F0836-11)												

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Sterling Technologies LLC

317 NE 144th St
Vancouver, WA 98685Project: Drinking Water - 2022

Project Number: Longview SD/Mt Solo

Project Manager: Thomas Nadermann

Report ID:

A2F0836 - 07 07 22 1017

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22F1049 - EPA 200.8 Direct Analysis						Drinking Water						
Duplicate (22F1049-DUP1)			Prepared: 06/29/22 09:26		Analyzed: 06/29/22 16:05							
QC Source Sample: MS-10 (A2F0836-11)												
EPA 200.8												
Lead	3.98	---	0.200	ug/L	1	---	4.02	---	---	1	20%	
Matrix Spike (22F1049-MS1)			Prepared: 06/29/22 09:26		Analyzed: 06/29/22 16:09							
QC Source Sample: MS-10 (A2F0836-11)												
EPA 200.8												
Lead	17.4	---	0.201	ug/L	1	15.0	4.02	89	70-130%	---	---	
Matrix Spike (22F1049-MS2)			Prepared: 06/29/22 09:26		Analyzed: 06/29/22 17:38							
QC Source Sample: MS-29 (A2F0836-30)												
EPA 200.8												
Lead	15.2	---	0.201	ug/L	1	15.0	1.83	89	70-130%	---	---	

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ORELAP ID: OR100062**Sterling Technologies LLC**317 NE 144th St
Vancouver, WA 98685Project: **Drinking Water - 2022**Project Number: **Longview SD/Mt Solo**Project Manager: **Thomas Nadermann****Report ID:****A2F0836 - 07 07 22 1017****QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals in Drinking Water by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22F1078 - EPA 200.8 Direct Analysis						Drinking Water						
Blank (22F1078-BLK1)			Prepared: 06/29/22 13:41		Analyzed: 06/29/22 17:42							
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
LCS (22F1078-BS1)			Prepared: 06/29/22 13:41		Analyzed: 06/29/22 17:54							
EPA 200.8												
Lead	14.1	---	0.201	ug/L	1	15.0	---	94	85-115%	---	---	
Duplicate (22F1078-DUP1)			Prepared: 06/29/22 13:41		Analyzed: 06/29/22 18:02							
QC Source Sample: MS-30 (A2F0836-31)												
EPA 200.8												
Lead	1.97	---	0.200	ug/L	1	---	1.92	---	---	2	20%	
Matrix Spike (22F1078-MS1)			Prepared: 06/29/22 13:41		Analyzed: 06/29/22 18:06							
QC Source Sample: MS-30 (A2F0836-31)												
EPA 200.8												
Lead	15.3	---	0.201	ug/L	1	15.0	1.92	89	70-130%	---	---	
Matrix Spike (22F1078-MS2)			Prepared: 06/29/22 13:41		Analyzed: 06/29/22 19:37							
QC Source Sample: MS-50 (A2F0836-51)												
EPA 200.8												
Lead	22.1	---	0.201	ug/L	1	15.0	8.91	88	70-130%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22F1081 - EPA 200.8 Direct Analysis						Drinking Water						
Blank (22F1081-BLK1)			Prepared: 06/29/22 14:39		Analyzed: 06/29/22 19:42							
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
LCS (22F1081-BS1)			Prepared: 06/29/22 14:39		Analyzed: 06/29/22 19:45							
EPA 200.8												
Lead	13.8	---	0.201	ug/L	1	15.0	---	92	85-115%	---	---	
Duplicate (22F1081-DUP1)			Prepared: 06/29/22 14:39		Analyzed: 06/29/22 19:53							
QC Source Sample: MS-51 (A2F0836-52)												
EPA 200.8												
Lead	1.82	---	0.200	ug/L	1	---	1.95	---	---	7	20%	
Matrix Spike (22F1081-MS1)			Prepared: 06/29/22 14:39		Analyzed: 06/29/22 19:57							
QC Source Sample: MS-51 (A2F0836-52)												
EPA 200.8												
Lead	14.9	---	0.201	ug/L	1	15.0	1.95	87	70-130%	---	---	
Matrix Spike (22F1081-MS2)			Prepared: 06/29/22 14:39		Analyzed: 06/29/22 21:12							
QC Source Sample: Non-SDG (A2F0904-01)												
EPA 200.8												
Lead	15.4	---	0.201	ug/L	1	15.0	2.09	89	70-130%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22F1111 - EPA 3015A						Drinking Water						
Blank (22F1111-BLK1)			Prepared: 06/30/22 10:13 Analyzed: 06/30/22 17:57									
EPA 200.8												
Lead	ND	---	0.222	ug/L	1	---	---	---	---	---	---	
LCS (22F1111-BS1)			Prepared: 06/30/22 10:13 Analyzed: 06/30/22 18:02									
EPA 200.8												
Lead	15.6	---	0.222	ug/L	1	16.7	---	93	85-115%	---	---	
Duplicate (22F1111-DUP1)			Prepared: 06/30/22 10:13 Analyzed: 06/30/22 18:29									
QC Source Sample: Non-SDG (A2F0801-02)												
Lead	1.38	---	0.222	ug/L	1	---	1.37	---	---	0.8	20%	DW-D
Matrix Spike (22F1111-MS1)			Prepared: 06/30/22 10:13 Analyzed: 06/30/22 18:34									
QC Source Sample: Non-SDG (A2F0801-02)												
EPA 200.8												
Lead	16.6	---	0.222	ug/L	1	16.7	1.37	91	70-130%	---	---	DW-D
Matrix Spike (22F1111-MS2)			Prepared: 06/30/22 10:13 Analyzed: 06/30/22 19:12									
QC Source Sample: Non-SDG (A2F0854-02)												
EPA 200.8												
Lead	19.8	---	0.222	ug/L	1	16.7	4.67	91	70-130%	---	---	DW-D

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ORELAP ID: OR100062

Sterling Technologies LLC317 NE 144th St
Vancouver, WA 98685Project: **Drinking Water - 2022**Project Number: **Longview SD/Mt Solo**Project Manager: **Thomas Nadermann****Report ID:****A2F0836 - 07 07 22 1017****SAMPLE PREPARATION INFORMATION****Total Metals in Drinking Water by EPA 200.8 (ICPMS)****Prep: EPA 200.8 Direct Analysis**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22F1044							
A2F0836-01	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 08:38	10mL/10mL	10mL/10mL	1.00
A2F0836-02	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 08:38	10mL/10mL	10mL/10mL	1.00
A2F0836-03	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 08:38	10mL/10mL	10mL/10mL	1.00
A2F0836-04	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 08:38	10mL/10mL	10mL/10mL	1.00
A2F0836-05	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 08:38	10mL/10mL	10mL/10mL	1.00
A2F0836-06	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 08:38	10mL/10mL	10mL/10mL	1.00
A2F0836-07	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 08:38	10mL/10mL	10mL/10mL	1.00
A2F0836-08	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 08:38	10mL/10mL	10mL/10mL	1.00
A2F0836-09	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 08:38	10mL/10mL	10mL/10mL	1.00
A2F0836-10	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 08:38	10mL/10mL	10mL/10mL	1.00
Batch: 22F1049							
A2F0836-11	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-12	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-13	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-14	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-15	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-16	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-18	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-19	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-20	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-21	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-22	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-23	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-24	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-25	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-26	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-27	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-28	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-29	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
A2F0836-30	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 09:26	10mL/10mL	10mL/10mL	1.00
Batch: 22F1078							
A2F0836-31	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-32	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-33	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-34	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Sterling Technologies LLC

317 NE 144th St
Vancouver, WA 98685Project: Drinking Water - 2022Project Number: Longview SD/Mt Solo
Project Manager: Thomas Nadermann

Report ID:

A2F0836 - 07 07 22 1017

SAMPLE PREPARATION INFORMATION

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Prep: EPA 200.8 Direct Analysis

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A2F0836-35	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-36	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-37	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-38	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-39	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-40	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-41	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-42	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-44	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-45	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-46	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-47	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-48	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-49	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-50	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00
A2F0836-51	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 13:41	10mL/10mL	10mL/10mL	1.00

Batch: 22F1081

A2F0836-52	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-53	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-54	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-55	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-56	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-57	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-58	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-59	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-60	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-61	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-62	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-63	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-64	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00
A2F0836-65	Drinking Water	EPA 200.8	06/16/22 00:00	06/29/22 14:39	10mL/10mL	10mL/10mL	1.00

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22F1111							
A2F0836-17	Drinking Water	EPA 200.8	06/16/22 00:00	06/30/22 10:13	45mL/50mL	10mL/10mL	1.11
A2F0836-43	Drinking Water	EPA 200.8	06/16/22 00:00	06/30/22 10:13	45mL/50mL	10mL/10mL	1.11

Apex Laboratories

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Sterling Technologies LLC

317 NE 144th St
Vancouver, WA 98685

Project: Drinking Water - 2022

Project Number: Longview SD/Mt Solo
Project Manager: Thomas Nadermann

Report ID:

A2F0836 - 07 07 22 1017

SAMPLE PREPARATION INFORMATION

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
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ANALYTICAL REPORT

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Project Manager: Thomas Nadermann

Report ID:

A2F0836 - 07 07 22 1017

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

DW-D Turbidity greater than 1 NTU. Sample was digested per EPA Method 200.8.

Apex Laboratories

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ANALYTICAL REPORT

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Project Manager: **Thomas Nadermann**

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

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ANALYTICAL REPORT

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Project Number: **Longview SD/Mt Solo**
Project Manager: **Thomas Nadermann**

Report ID:

A2F0836 - 07 07 22 1017

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

Sterling Technologies LLC

317 NE 144th St
Vancouver, WA 98685

Project: **Drinking Water - 2022**

Project Number: **Longview SD/Mt Solo**

Project Manager: **Thomas Nadermann**

Report ID:

A2F0836 - 07 07 22 1017

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
<u>All reported analytes are included in Apex Laboratories' current ORELAP scope.</u>					

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Darrell Auvil, Client Services Manager

Sterling Technologies LLC

317 NE 144th St
Vancouver, WA 98685

Project: Drinking Water - 2022

Project Number: Longview SD/Mt Solo

Project Manager: Thomas Nadermann

Report ID:

A2F0836 - 07 07 22 1017

Chain of Custody
Field Sampling Log

Page 1 of 4
Sterling Technologies, LLC
Providing technical consulting support to the
environmental and manufacturing industries
317 NE 144th Street Vancouver, WA 98685
360.576.6331

Project Name: Longview S.D.

Site Location: Mt Solo

Date: 6-16-2022

Project Contact: T. NADERMANN

Turnaround Time: ✓

Normal: _____

Other: _____

Sample ID	Location/Description	Analysis	Comments
M5-0	Nurse RR - Sink F	Pb-DW	
"-1	Nurse Sink - F	"	
M5-2	Staff RR - By SOD E-F	"	
M5-3	" " " W-F	"	
M5-4	Staff Rm - By SOD - Sink F	"	
M5-5	" Work Room - Sink F	"	
M5-6	Girls Restroom - by SOD - F	"	
M5-7	" " " North of Gate - F	"	
M5-8	Kitchen Staff - RR - SF	"	
M5-9	KSF - NW - F	"	
M5-10	K-NE - Wash - SF	"	
M5-11	K-Small Sink - WNN - F	"	
M5-12	K-Small Sink South - F	"	
M5-13	K-Sink Faucet - West	"	
M5-14	K-Wash - Sink Faucet - North x2	"	
M5-15	K-Small Sink Faucet - ENE	"	
M5-16	K-look Sink Faucet - SW	"	

Sampled by: Ed Wilson

Date: 6-16-22

Shawn Thompson 1245 6-17-22

Sterling Technologies LLC

317 NE 144th St

Vancouver, WA 98685

Project: Drinking Water - 2022

Project Number: Longview SD/Mt Solo

Project Manager: Thomas Nadermann

Report ID:

A2F0836 - 07 07 22 1017

Chain of Custody

Field Sampling Log

H2F0836 Page 2 of 4
 Sterling Technologies, LLC
 Providing technical consulting support to the
 environmental and manufacturing industries
 317 NE 144th Street Vancouver, WA 98685
 360.576.6331

Project Name: Longview S.D.

Site Location: MT Solo

Date: 6-16-2022

Project Contact: T. Nadermann

Turnaround Time:

Normal: ☒

Other:

Sample ID	Location/Description	Analysis	Comments
MS-17	Kitchen-look Wash Sink F	Pb in DW	
MS-18	Hall DW F-North of Kitchen-	"	
MS-19	Cafeteria - DW F	"	
MS-20	Staff RR North of Cafe - F	"	
MS-21	Room 200 - 0 5 F	"	
MS-22	Hall by 300 - DW F	"	
MS-23	BBR by 516 - Sink F	"	
MS-24	516 - 516 - L3-x2 - F	"	
MS-25	500 - SF - L3	"	
MS-26	512 - B Prep - Sink - F	"	
MS-27	512 - B - L5F x2 - F	"	
MS-28	512B - L5F2 - F	"	
MS-29	Boys Rest Room N of Cafe - F	"	
MS-30	BBR - by 300 - F	"	
MS-31	509 - SF - L2 - Hood - F	"	
MS-32	503 - SF	"	
MS-33	500 - SF - L2 - F	"	

Sampled by:

Fel Wilson

Date: 6-16-2022
Shawn Thompson 1245 6-17-22

Sterling Technologies LLC

317 NE 144th St
Vancouver, WA 98685

Project: Drinking Water - 2022

Project Number: Longview SD/Mt Solo

Project Manager: Thomas Nadermann

Report ID:

A2F0836 - 07 07 22 1017

A2F0836 page 3 of 4
Sterling Technologies, LLC
Providing technical consulting support to the
environmental and manufacturing industries
317 NE 144th Street Vancouver, WA 98685
360.576.6331

Chain of Custody

Field Sampling Log

Project Name: Longview S.D.

Site Location: MT Solo

Date: 6-16-2022

Project Contact: T. Nadermann

Turnaround Time: ✓

Normal: ✓

Other: ✓

Sample ID	Location/Description	Analysis	Comments
M3-34	503 - DLOF	Pb in DLO	
M3-35	500 - SF-L1-F	" " "	
M3-36	509 - SF-L3-F	" " "	
M3-37	507 - SK	" " "	
M3-38	509 - SF-L1-F	" " "	
M3-39	BRB - by 516-SF	" " "	
M3-40	516 - SF-L2 x2	" " "	
M3-41	516 - SF-L1 x2	" " "	
M3-42	605 - SF	" " "	
M3-43	500 - SF-LF	" " "	
M3-44	512 B - LF-1	" " "	
M3-45	Hall DF - By 509	" " "	
M3-46	516 - DF	" " "	
M3-47	605 - DF	" " "	
M3-48	Hall Sink Street by 704	" " "	
M3-49	Hall Sink " by 804	" " "	
M3-50	512-B - Front Sink-F	" " "	

Date: 6-16-22

1245 6.17.22

Sampled by:

Ed Wilson

Ph. Shawn Thompson

Sterling Technologies LLC

317 NE 144th St
Vancouver, WA 98685

Project: Drinking Water - 2022

Project Number: Longview SD/Mt Solo

Project Manager: Thomas Nadermann

Report ID:

A2F0836 - 07 07 22 1017

Chain of Custody

Field Sampling Log

#2F0836 Page 4 of 4
Sterling Technologies, LLC
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360.576.6331

Project Name:

Site Location:

Date:

Project Contact:

Longview S.D.

MT Solo

6-16-2022

T. NADEEMANN

Turnaround Time:

Normal: ☒

Other: ☐

Sample ID	Location/Description	Analysis	Comments
MS-51	604 - DW F	Pb in D.W.	
MS-52	603 - DW F	"	
MS-53	603 - Sink-F	"	
MS-54	Girls Rest Room - 516-F	"	
MS-55	604 - Sink Faucet	"	
MS-56	Girls Locker Room Sink-F	"	
MS-56	Girls Rest Room across Gym-F	"	
MS-57	Boys Locker Room - Sink-F	"	
MS-59	Girls Locker Room - RR-F	"	
MS-60	Girls Rest Room across Gym - DW F	"	
MS-61	BR R across Gym-F	"	
MS-62	" " DW F	"	
MS-63	Boys Locker Room - RR - Sink-F	"	
MS-64	ED3 - Rest Room - Sink-F	"	

Sampled by:

Ed Wilson
Shawn Thompson

Date:

6-16-2022

1245 6.17.22



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Sterling Technologies LLC

317 NE 144th St

Vancouver, WA 98685

Project: Drinking Water - 2022Project Number: Longview SD/Mt SoloProject Manager: Thomas Nadermann

Report ID:

A2F0836 - 07 07 22 1017

APEX LABS COOLER RECEIPT FORM

Client: Sterling Element WO#: A2 F0836Project/Project #: Longview S.D / Mt solo

Delivery Info:

Date/time received: 6.17.22 @ 1245 By: SATDelivered by: Apex ☒ Client ☐ ESS ☐ FedEx ☐ UPS ☐ Swift ☐ Senvoy ☐ SDS ☐ Other ☐Cooler Inspection Date/time inspected: 6.17.22 @ 1730 By: SATChain of Custody included? Yes ☒ No ☐ Custody seals? Yes ☐ No ☒Signed/dated by client? Yes ☒ No ☐Signed/dated by Apex? Yes ☒ No ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>16.4</u>						
Received on ice? (Y/N)	<u>N</u>						
Temp. blanks? (Y/N)	<u>N</u>						
Ice type: (Gel/Real/Other)	<u>N/A</u>						
Condition:	<u>Good</u>						

Cooler out of temp? ☒ Possible reason why: WATER ST DRINKING WATERGreen dots applied to out of temperature samples? Yes ☒Out of temperature samples form initiated? Yes ☒Sample Inspection: Date/time inspected: 6/17/22 @ 1440 By: JSAll samples intact? Yes ☒ No ☐ Comments: _____Bottle labels/COCs agree? Yes ☒ No ☐ Comments: _____COC/container discrepancies form initiated? Yes ☐ No ☒Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments: _____Do VOA vials have visible headspace? Yes ☐ No ☐ NA ☒

Comments: _____

Water samples: pH checked: Yes ☐ No ☐ NA ☒ pH appropriate? Yes ☐ No ☐ NA ☒

Comments: _____

Additional information:

Labeled by:

JS

Witness:

JS

Cooler Inspected by:

JS

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darrell Auail

Darrell Auail, Client Services Manager

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